

Trend Study 19B-14-97

Study site name: Black Rock Canyon.

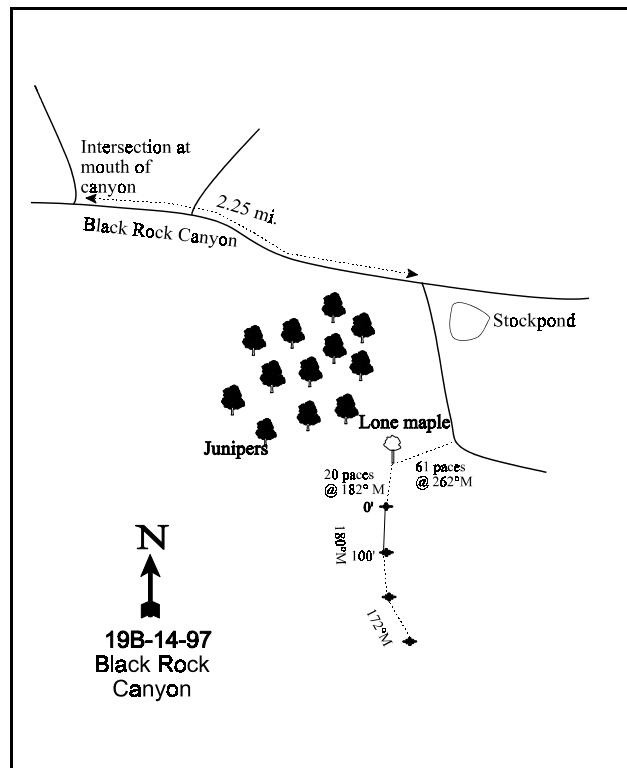
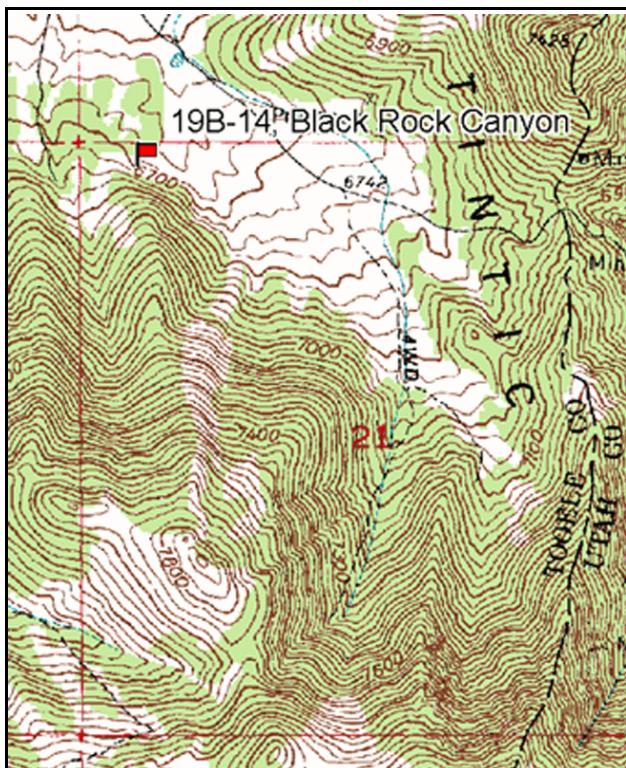
Vegetation type: Mountain Brush.

Compass bearing: frequency baseline 180 degrees magnetic (Line 3 @ 172°M).

Frequency belt placement: Line 1 (11 & 95ft), line 2 (34 & 71ft), line 3 (59ft).

LOCATION DESCRIPTION

From the road intersection at the mouth of Black Rock Canyon, proceed east up the canyon for 2.25 miles to a stock pond. From the west side of this pond, the 0-foot mark of the frequency baseline is at 200 degrees magnetic. The best way to reach the site is to drive down the faint road to where it bends. From the bend in the road the 0-foot stake is 61 paces at 262 degrees magnetic. It is marked by a 15 inch high steel fencepost with a red browse tag, number 3940.



Map Name: Boulder Peak

Township 9S, Range 3W, Section 21

Diagrammatic Sketch

GPS: NAD 27, UTM 12S 4431245 N 398400 E

DISCUSSION

Black Rock Canyon - Trend Study No. 19B-14

***SUSPENDED - This site was suspended in 2002. The narrative and data tables from the 1997 report are included below.

The Black Rock Canyon trend study is located on the north end of the East Tintic Mountains. The study site is on a steep (53%), north facing slope at an elevation of 6,800 feet. The range type is a diverse mixture of mountain brush with a scattered curlleaf mountain mahogany component. Pinyon and juniper are also scattered throughout the area, providing good cover for big game. In 1997, several bedding areas were observed in the vicinity of the site. Pellet transect data from 1997 indicates 33 deer days/acre (82 ddu/ha), less than one elk day use/acre (2 edu/ha), and less than one cow day use/acre (2 cdu/ha). Cattle appear to utilize the surrounding flats and canyon bottoms more intensively than the study area.

The soil is deep with an effective rooting depth of 24 inches. Soil temperature averaged almost 50°F at 18 inches in depth. Soil textural analysis indicates it to be a loam with a slightly alkaline pH (7.5). Percent organic matter is relatively high at 6.5%. The soil surface is well protected by vegetation and litter, keeping erosion to a minimum.

Curlleaf mountain mahogany provides the most canopy cover of all browse species at 14%. Density shows a slight increase since 1989. It is currently estimated at 260 plants/acre. This is a mostly mature population with light utilization. Average height is 14 feet with an average crown measurement of 15½ feet. Mountain snowberry provides 12% canopy cover in 1997. Estimated density is currently 4,680 plants/acre, a decrease from nearly 20,000 estimated plants/acre in both 1983 and 1989. This change is from the more accurate estimate from the larger sample size used in 1997 which more accurately estimates species with clumped and/or discontinuous distributions. This population shows light utilization and good vigor. The estimated density for mountain big sagebrush was 3,065 plants/acre in 1983, 2,199 plants/acre in 1989 and finally 1,980 plants/acre in 1997. Utilization is light to moderate in all readings. The percentage of decadent plants has not changed since 1989, yet vigor continues to decline. The mountain big sagebrush plants are moderately large with an average height measurement of 30 inches and an average crown measurement of 32 inches. Both data and photographs indicate that the population is thinning. Another indicator of continuing downward trend for mountain big sagebrush is that 100% of the decadent plants were classified as dying in 1997. Right now, the dead to live ratio is about 1:3, or about 26% of the plants are dead.

Chokecherry density is currently estimated at 3,000 plants/acre. In 1989, the entire population of chokecherry plants were classified as young. This is likely a misidentification as 62% of the population were classified as mature in the previous reading. Currently, utilization is light to moderate, vigor is good, and decadence low. The Saskatoon serviceberry population shows a steady increase from 598 plants/acre in 1983 to 1,066 plants/acre in 1989, and 1,440 plants/acre in 1997. Utilization is light to moderate and vigor continues to be good. The stickyleaf low rabbitbrush population shows a steady decline since 1983 from 1,932 plants/acre to 1,133 plants/ace in 1989, and 260 plants/acre in 1997. Point-centered quarter data indicates 12 bigtooth maple trees/acre, 5 juniper trees/acre, and 76 pinyon trees/acre. Other browse encountered on the site include Martin ceanothus, true mountain mahogany, and Wood's rose.

In 1989, there was a great increase in herbaceous understory sum of nested frequency from 472 to 850. Much of this increase was due to an increase in forbs. In 1997, the herbaceous understory sum of nested frequency dropped back down to 566 with a decrease for both grasses and forbs. Grasses provide a bulk of the herbaceous understory forage (79%), primarily from sedge, spike fescue, and mutton bluegrass. Species composition of both forbs and grasses is diverse and average in palatability. Currently, utilization is light. Grass and forb productivity is inhibited most by dense shrub growth, not from grazing.

1983 APPARENT TREND ASSESSMENT

This is an average to good quality summer range site with an ecologically stable trend. Soil condition is good, and except for a few isolated spots, is not subject to serious erosion. The area consists of a dense mixed browse stand with an understory and less prominent mix of grasses and forbs. These will continue to provide needed succulence to the degree allowed by their secondary or subdominant status.

1989 TREND ASSESSMENT

The soil trend is stable with no apparent increase in erosion on the site. Vegetative and litter cover remain adequate to keep runoff to a minimum. The browse trend is stable with some species showing a decline in density while others are increasing. The herbaceous understory trend is upward with a great increase in herbaceous understory sum of nested frequency value.

TREND ASSESSMENT

soil - stable (3)

browse - stable (3)

herbaceous understory - up (5)

1997 TREND ASSESSMENT

The soil trend continues to be stable. Erosion is only slight due to the abundance of protective vegetation and litter cover. The browse trend is stable overall. There are some changes in populations. However, most of the changes were because of the larger sample size giving more accurate density estimates for the browse species. The one population that has an apparent continuing downward trend is mountain big sagebrush. This is illustrated by the dead to live ratio of 1:3 in the population and that 100% of the decadent plants were classified as dying. Because it only makes up about 14% of the total browse cover, and where many other species have increased, this will have little effect overall. This is especially true since this is a summer range, where these depressed values would be of critical concern if it were a critical winter range. The herbaceous understory production would increase if the browse canopy were to be reduced. The herbaceous understory trend is downward. There has been a great decrease in perennial forb sum of nested frequency since 1989, but it should be noted that forbs only make up 21% of the herbaceous cover.

TREND ASSESSMENT

soil - stable (3)

browse - stable (3)

herbaceous understory - down (1)

HERBACEOUS TRENDS --

Herd unit 19B, Study no: 14

T y p e	Species	Nested Frequency			Quadrat Frequency			Avera ge Cover %
		'83	'89	'97	'83	'89	'97	
G	Agropyron trachycaulum	14	36	21	6	13	8	1.08
G	Carex spp.	^a 177	^b 213	^a 127	61	63	33	12.64
G	Leucopoa kingii	^a 59	^b 89	^a 40	26	35	17	1.72
G	Oryzopsis hymenoides	3	-	-	1	-	-	.03
G	Poa fendleriana	^a 11	^{ab} 27	^b 34	5	11	15	.91
G	Poa pratensis	^b 24	^a 7	^{ab} 17	12	4	7	.28
G	Poa secunda	^a -	^b 6	^c 32	-	5	13	.41
G	Stipa columbiana	12	9	18	6	6	9	.55

T y p e	Species	Nested Frequency			Quadrat Frequency			Avera ge Cover %
		'83	'89	'97	'83	'89	'97	
	Total for Annual Grasses	0	0	0	0	0	0	0
	Total for Perennial Grasses	300	387	289	117	137	102	17.65
	Total for Grasses	300	387	289	117	137	102	17.65
F	<i>Agoseris glauca</i>	1	1	9	1	1	4	.02
F	<i>Allium</i> spp.	^a 16	^b 35	^{ab} 26	7	21	15	.10
F	<i>Arabis</i> spp.	3	1	8	1	1	4	.02
F	<i>Arenaria</i> spp.	-	-	20	-	-	10	1.61
F	<i>Aster chilensis</i>	^a 52	^b 123	^a 57	24	46	26	1.79
F	<i>Astragalus convallarius</i>	^{ab} 6	^b 8	^a -	3	6	-	-
F	<i>Calochortus nuttallii</i>	^a -	^a 3	^b 30	-	1	17	.16
F	<i>Comandra pallida</i>	2	-	-	2	-	-	-
F	<i>Collinsia parviflora</i> (a)	-	-	14	-	-	6	.05
F	<i>Crepis acuminata</i>	-	23	18	-	9	10	.44
F	<i>Erigeron</i> spp.	-	-	3	-	-	2	.01
F	<i>Eriogonum racemosum</i>	4	6	4	2	3	3	.07
F	<i>Eriogonum umbellatum</i>	1	3	4	1	2	2	.18
F	<i>Fragaria</i> spp.	^{ab} 6	^b 9	^a -	3	4	-	-
F	<i>Geranium</i> spp.	28	24	22	14	14	10	.17
F	<i>Helianthus annuus</i> (a)	-	15	-	-	7	-	-
F	<i>Helianthella uniflora</i>	5	-	-	2	-	-	-
F	<i>Ipomopsis aggregata</i>	2	6	-	2	2	-	-
F	<i>Lathyrus brachycalyx</i>	^a 18	^b 154	^a 27	10	60	16	.47
F	<i>Lithospermum ruderale</i>	^a 7	^{ab} 20	^b 18	3	9	10	.34
F	<i>Lomatium</i> spp.	-	-	1	-	-	1	.00
F	<i>Machaeranthera canescens</i>	-	2	-	-	2	-	-
F	<i>Microsteris gracilis</i> (a)	-	-	8	-	-	4	.04
F	<i>Penstemon</i> spp.	-	-	7	-	-	3	.01
F	<i>Phlox longifolia</i>	-	2	-	-	2	-	-
F	<i>Polygonum douglasii</i> (a)	-	-	14	-	-	5	.02
F	<i>Senecio integerrimus</i>	-	-	2	-	-	1	.15
F	<i>Senecio multilobatus</i>	-	-	4	-	-	1	.00
F	<i>Solidago sparsiflora</i>	19	7	21	9	4	8	.55
F	<i>Taraxacum officinale</i>	2	12	1	1	4	1	.03
F	Unknown forb-perennial	-	6	-	-	3	-	-
F	<i>Viola</i> spp.	-	3	-	-	1	-	-
	Total for Annual Forbs	0	15	36	0	7	15	0.12
	Total for Perennial Forbs	172	448	282	85	195	144	6.18
	Total for Forbs	172	463	318	85	202	159	6.30

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --
Herd unit 19B, Study no: 14

T y p e	Species	Strip Frequency '97	Average Cover % '97
B	<i>Acer grandidentatum</i>	4	.96
B	<i>Amelanchier alnifolia</i>	41	1.85
B	<i>Artemisia tridentata vaseyana</i>	63	7.31
B	<i>Cercocarpus ledifolius</i>	12	14.10
B	<i>Ceanothus martinii</i>	13	.21
B	<i>Cercocarpus montanus</i>	10	1.02
B	<i>Chrysothamnus viscidiflorus</i> <i>viscidiflorus</i>	11	.48
B	<i>Pachistima myrsinites</i>	66	3.04
B	<i>Pinus monophylla</i>	9	4.67
B	<i>Prunus virginiana</i>	65	2.87
B	<i>Rosa woodsii</i>	33	1.77
B	<i>Symphoricarpos oreophilus</i>	63	12.44
Total for Browse		390	50.78

CANOPY COVER --
Herd unit 19B, Study no: 14

Species	Percent Cover '97
<i>Amelanchier alnifolia</i>	1
<i>Cercocarpus ledifolius</i>	29
<i>Pinus monophylla</i>	4

BASIC COVER --
Herd unit 19B, Study no: 14

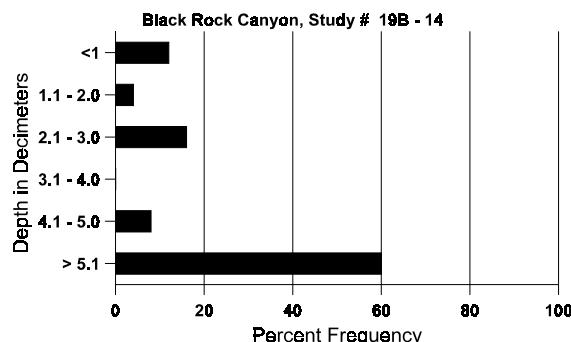
Cover Type	Nested Frequency '97	Average Cover %		
		'83	'89	'97
Vegetation	343	5.75	27.25	61.04
Rock	121	8.00	7.50	9.61
Pavement	13	0	0	.19
Litter	390	74.50	57.75	63.36
Cryptogams	13	1.75	.25	.48
Bare Ground	86	10.00	7.25	4.92

SOIL ANALYSIS DATA --

Herd Unit 19B, Study no: 14, Black Rock Canyon

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
24.1	49.5 (17.7)	7.5	35.4	42.1	22.6	6.5	14.0	243.2	0.5

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 19B, Study no: 14

Type	Quadrat Frequency	Pellet Transect	
		Pellet Groups per Acre '97	Days Use per Acre (ha) '97
Deer	6	426	33 (82)
Cattle	-	9	1 (2)

BROWSE CHARACTERISTICS --

Herd unit 19B, Study no: 14

A G E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total									
		1	2	3	4	5	6	7	8	9	1	2	3	4												
<i>Acer grandidentatum</i>																										
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
	89	-	1	-	-	-	-	1	-	-	2	-	-	-	133		2									
	97	7	-	-	1	-	-	-	-	-	8	-	-	-	160		8									
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>															
'83		00%			00%			00%			+17%															
'89		50%			00%			00%																		
'97		00%			00%			00%																		
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-											
												'89	133		-											
												'97	160		-											

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total										
		1	2	3	4	5	6	7	8	9	1	2	3	4													
Amelanchier alnifolia																											
Y	83	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1										
	89	4	4	-	-	1	-	3	-	-	11	1	-	-	800		12										
	97	5	-	-	3	-	-	-	-	-	8	-	-	-	160		8										
M	83	-	1	2	2	2	-	-	-	-	2	-	5	-	466	48 24	7										
	89	-	1	-	1	2	-	-	-	-	4	-	-	-	266	101 36	4										
	97	25	16	5	14	-	-	3	1	-	60	-	4	-	1280	34 29	64										
D	83	-	1	-	-	-	-	-	-	-	-	-	1	-	66		1										
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0										
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0										
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>															
'83		44%			22%			67%				+44%															
'89		50%			00%			00%				+26%															
'97		22%			07%			06%																			
Total Plants/Acre (excluding Dead & Seedlings)												'83	598	Dec:	11%												
												'89	1066		0%												
												'97	1440		0%												
Artemesia tridentata vaseyana																											
Y	83	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1										
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0										
	97	4	-	-	-	-	-	-	-	-	3	-	1	-	80		4										
M	83	30	11	-	-	-	-	-	-	-	41	-	-	-	2733	33 34	41										
	89	25	-	-	1	-	-	-	-	-	8	17	1	-	1733	32 31	26										
	97	56	10	5	2	-	-	1	-	-	72	-	2	-	1480	30 32	74										
D	83	3	1	-	-	-	-	-	-	-	-	-	4	-	266		4										
	89	7	-	-	-	-	-	-	-	-	1	3	3	-	466		7										
	97	13	6	-	1	1	-	-	-	-	-	-	-	21	420		21										
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0										
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0										
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	680		34										
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>															
'83		26%			00%			09%				-28%															
'89		00%			00%			12%				-10%															
'97		17%			05%			24%																			
Total Plants/Acre (excluding Dead & Seedlings)												'83	3065	Dec:	9%												
												'89	2199		21%												
												'97	1980		21%												

A G E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Cercocarpus ledifolius																	
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	97	1	-	-	1	-	-	2	8	-	12	-	-	-	240	172	186
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'83	00%			00%			00%									
	'89	00%			00%			00%				+75%					
	'97	00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	0%		
												'89	66		0%		
												'97	260		8%		
Ceanothus martinii																	
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	1	11	1	-	1	-	-	-	-	1	13	-	-	933		14
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
M	83	-	-	6	-	-	-	-	-	-	-	-	6	-	400	24	31
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	97	12	1	-	3	-	-	-	-	-	15	-	1	-	320	14	26
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	2	-	-	-	-	-	-	-	-	2	-	-	133		2
	97	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'83	00%			100%			100%				+62%					
	'89	88%			06%			00%				-62%					
	'97	05%			00%			05%									
Total Plants/Acre (excluding Dead & Seedlings)												'83	400	Dec:	0%		
												'89	1066		12%		
												'97	400		15%		

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
<i>Cercocarpus montanus</i>																	
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	97	6	7	3	1	-	-	-	1	-	18	-	-	-	360	65	54
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'83																
	'83																
	'89																
	'89																
	'97																
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-		
<i>Chrysothamnus viscidiflorus viscidiflorus</i>																	
Y	83	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1
	89	6	-	-	3	-	-	-	-	-	9	-	-	-	600		9
	97	-	-	-	2	-	-	-	-	-	2	-	-	-	40		2
M	83	28	-	-	-	-	-	-	-	-	28	-	-	-	1866	16	28
	89	4	-	-	-	-	-	-	1	-	5	-	-	-	333	16	5
	97	6	-	-	4	-	-	1	-	-	11	-	-	-	220	18	11
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	3	-	-	-	-	-	-	-	-	1	-	2	-	200		3
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'83																
	'83																
	'89																
	'89																
	'97																
Total Plants/Acre (excluding Dead & Seedlings)												'83	1932	Dec:	0%		
<i>Cowania mexicana stansburiana</i>																	
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	82	159
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'83																
	'83																
	'89																
	'89																
	'97																
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-		

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
<i>Juniperus osteosperma</i>																	
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
M	83	1	-	-	-	-	-	-	-	-	1	-	-	-	66	29	16
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'83	00%			00%			00%				+ 0%					
	'89	00%			00%			00%									
	'97	00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'83	66	Dec:	-		
												'89	66		-		
												'97	0		-		
<i>Pachistima myrsinites</i>																	
Y	83	127	-	-	-	-	-	-	-	-	127	-	-	-	8466		127
	89	79	-	-	5	-	-	91	-	-	175	-	-	-	11666		175
	97	12	-	-	14	-	-	-	-	-	26	-	-	-	520		26
M	83	118	-	-	-	-	-	-	-	-	118	-	-	-	7866	4	9
	89	2	-	-	-	-	-	8	-	-	10	-	-	-	666	4	4
	97	127	4	-	126	-	-	34	-	-	291	-	-	-	5820	5	6
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'83	00%			00%			00%				-24%					
	'89	00%			00%			00%				-49%					
	'97	01%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'83	16332	Dec:	-		
												'89	12332		-		
												'97	6340		-		
<i>Pinus monophylla</i>																	
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	97	6	-	-	2	-	-	2	-	-	10	-	-	-	200		10
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	1	-	-	-	-	-	1	-	-	-	66		1
	97	8	-	-	-	-	-	-	-	-	7	-	1	-	160		8
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-
	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40	-	2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'83	00%			00%			00%									
	'89	00%			00%			00%				+67%					
	'97	00%			00%			10%									
Total Plants/Acre (excluding Dead & Seedlings)												'83	0	Dec:	-		
												'89	66		-		
												'97	200		-		

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Prunus virginiana																	
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
Y	83	22	-	-	-	-	-	-	-	-	-	22	-	-	1466		22
	89	120	-	-	1	-	-	12	-	-	129	4	-	-	8866		133
	97	13	-	-	1	-	-	-	-	-	14	-	-	-	280		14
M	83	37	11	-	-	-	-	-	-	-	-	48	-	-	3200	20	48
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	97	79	18	11	13	3	-	-	-	-	124	-	-	-	2480	35	124
D	83	8	-	-	-	-	-	-	-	-	-	8	-	-	533		8
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	97	10	-	-	2	-	-	-	-	-	7	-	2	3	240		12
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	200		10
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'83	14%			00%			00%				+41%					
	'89	00%			00%			00%				-66%					
	'97	14%			07%			03%									
Total Plants/Acre (excluding Dead & Seedlings)												'83	5199	Dec:	10%		
												'89	8866		0%		
												'97	3000		8%		
Rosa woodsii																	
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	1	-	-	-	-	-	2	-	-	3	-	-	-	200		3
	97	1	-	-	1	-	-	-	-	-	2	-	-	-	40		2
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	61	-	-	2	-	-	6	-	-	68	1	-	-	4600		69
	97	10	-	-	4	-	-	1	-	-	15	-	-	-	300		15
M	83	22	-	-	-	-	-	-	-	-	-	-	22	-	1466	9	22
	89	7	5	-	-	-	-	-	-	-	10	2	-	-	800	19	12
	97	78	-	4	19	-	-	4	-	-	98	-	7	-	2100	19	105
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	2	1	-	-	-	-	-	-	-	-	1	2	-	200		3
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'83	00%			00%			100%				+74%					
	'89	07%			00%			02%				-57%					
	'97	00%			03%			06%									
Total Plants/Acre (excluding Dead & Seedlings)												'83	1466	Dec:	0%		
												'89	5600		4%		
												'97	2400		0%		

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Symphoricarpos oreophilus																	
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	97	-	6	-	-	-	-	-	-	-	6	-	-	-	120		6
Y	83	52	-	-	-	-	-	-	-	-	31	21	-	-	3466		52
	89	114	-	-	-	-	-	17	-	-	131	-	-	-	8733		131
	97	2	-	2	27	-	-	-	-	-	31	-	-	-	620		31
M	83	174	70	-	-	-	-	-	-	-	82	162	-	-	16266	31	19
	89	156	-	-	5	-	-	3	-	-	164	-	-	-	10933	25	20
	97	131	38	4	29	-	-	1	-	-	191	6	6	-	4060	22	31
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	80		4
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'83	24%				00%			00%							- 0%	
	'89	00%				00%			00%							-76%	
	'97	16%				03%			03%								
Total Plants/Acre (excluding Dead & Seedlings)												'83	19732	Dec:	-		
												'89	19666		-		
												'97	4680		-		